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Abstract

RESEARCH REACTORS IN SPAIN

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There are now in Spain three Research Reactors: JEN-1 at the National Centre of Nuclear Energy in Madrid, ARGOS at the Technical School of Industrial Engineers in Barcelona and ARBI at the Technical School of Industrial Engineers in Bilbao. The first one is an American swimming pool type reactor working at a maximum power of 3 MW; it first became critical at the end of 1958. The other two are Argonaut type reactors, were constructed in Spain and went into operation at the middle of 1962.

In this report the activities of these reactors are described; including first, data concerning the organization of the reactors themselves and their relation with the centres where they are located.

Among the activities of these reactors, the operation problems are briefly discussed. These problems were specially important at the beginning; afterwards the training activities of students have been playing an important role in some of these reactors. The technical research has been basically instrumentation tests, such as ionization chambers and other neutron detectors as well as the irradiation of some fuel elements. One outstanding application of the swimming pool reactor has been the isotope production. In this field the production of I^{131} , Au^{198} and P^{32} has become very

important. Also interesting studies were accomplished using the activation analysis techniques.

As far as pure research in concerned the reactors have been used for neutron physics studies; this subject is still a fruitful field of research. Finally it is worth to mention the applications in the field of pure Nuclear Physics and Solid State Physics that, although recently started, show already some interesting results.